Jameco Part number 156232

LM2940/LM2940C 1A Low Dropout Regulator

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National Semiconductor

LM2940/LM2940C
1A Low Dropout Regulator

General Description

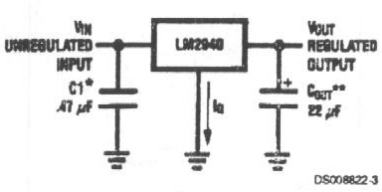
The LM2940/LM2940C positive voltage regulator features the ability to source 1A of output current with a dropout voltage of typically 0.5V and a maximum of 1V over the entire temperature range. Furthermore, a quiescent current reduction circuit has been included which reduces the ground current when the differential between the input voltage and the output voltage exceeds approximately 3V. The quiescent current with 1A of output current and an input-output differential of 5V is therefore only 30 mA. Higher quiescent currents only exist when the regulator is in the dropout mode (V_{IN} - $V_{OUT} \leq 3V$).

Designed also for vehicular applications, the LM2940/LM2940C and all regulated circuitry are protected from reverse battery installations or 2-battery jumps. During line transients, such as load dump when the input voltage can momentarily exceed the specified maximum operating voltage, the regulator will automatically shut down to protect both the internal circuits and the load. The LM2940LM2940C cannot be harmed by temporary mirror-image inSertion. Familiar regulator features such as short circuit and thermal overload protection are also provided.

Features

- Dropout voltage typically 0.5V $_{IO}$ = 1A
- Output current in excess of 1A
- Output voltage trimmed before assembly
- Reverse battery protection
- Internal short circuit current limit
- Mirror Image insertion protection
- P+ Product Enhancement tested

Typical Application



* Required if regulator is located for from power supply filter.

** COUT must be at least 22 µF to maintain stability. May be increased without bound to maintain regulation during transients. Locate as close as poss ible to the regulator. This capacitor must be rated over the same operating temperature range as the regulator and the ESR is critical; see curve.

Ordering Information

Temperature Range	Output Voltage						Package
	5.0	**8.0**	**9.0**	**10**	**12**	**15**	
0°C ≤ TA ≤ 125°C	LM2940CT-5.0		LM2940CT-9.0		LM2940CT-12	LM2940CT-15	TO-220
	LM2940CS-5.0		LM2940CS-9.0		LM2940CS-12	LM2940CS-15	TO-263
-40°C ≤ TA ≤ 125°C	LM2940T-5.0	LM2940T-8.0	LM2940T-9.0	LM2940T-10	LM2940T-12		TO-220
	LM2940S-5.0	LM2940S-8.0	LM2940S-9.0	LM2940S-10	LM2940S-12		TO-263
-40°C ≤ TA ≤ 85°C	LM2940IMP-5.0	LM2940IMP-8.0	LM2940IMP-9.0	LM2940IMP-10	LM2940IMP-12	LM2940IMP-15	SOT-223
SOT-223 Package Marking	L53B	L54B	LOEB	L55B	L56B	L70B	
-55°C ≤ TA ≤ 125°C	LM2940K-5.0/883	LM2940K-8.0/883			LM2940K-12/883	LM2940K-15/883	TO-3

The physical size of the SOT-223 is too small to contain the full device part number. The package markings indicated are what will appear on the actua l device.

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